

Ohio Beetles Bulletin

Occasional Publication of the Ohio Coleopterists

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Agyrtidae: *Necrophilus pettitii* Horn

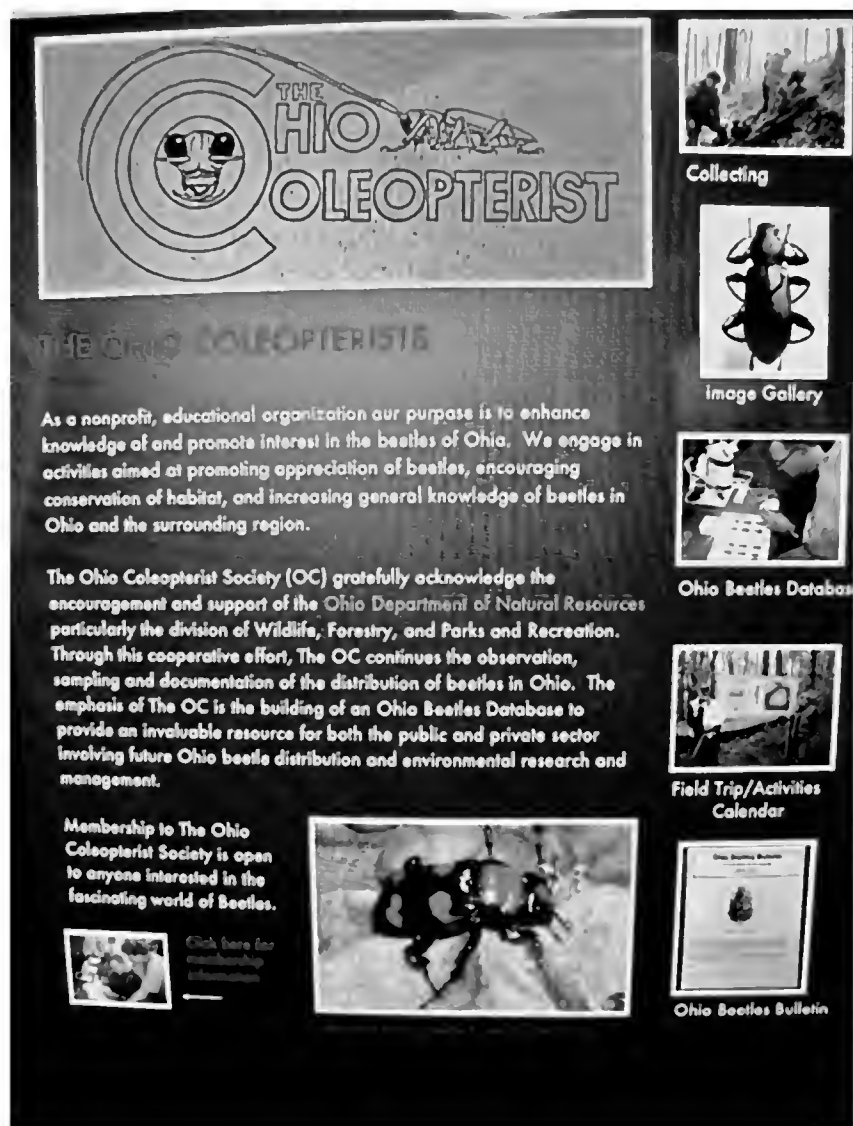
The Ohio Beetles Bulletin (OBB) was developed to provide the Ohio Coleopterists membership a means of communication in conjunction with the Ohio Coleopterists Newsletter. It is hoped the OBB will provide an informative and enjoyable means of sharing information on the fascinating world of Beetles.

“When we have experienced the atavistic joy of collecting in the open air and the manipulative pleasure of setting and mounting our chosen beetles there follows the refined intellectual delight of naming them with precision”.

Quote by G.B. Walsh taken from the first edition of the Coleopterists Handbook. W.J.B. Crotch, General Editor London, December 1953.

Cover Photo: *Necrophilus pettitii* Horn Specimen collected by Ken Karns 09-23 November-2008. Ross Co. Ohio (6.0 mm)
Taken in a carrion baited pitt-fall trap.

OHIO COLEOPTERISTS WEB-SITE RETOOLED!



OC Web-Site Home page
View at:

ohiocoleo.org

Anyone wishing to submit pictures or articles for the Ohio Beetles Bulletin, please forward to Ken Karns at the following e-mail:

species@columbus.rr.com

The Ohio Coleopterists have completed initial start up work on the new web-site. This is an ongoing project and no good web-site remains static so changes and updates will be forthcoming. Please take time to peruse the site and forward any comments to the website administrator at the following:

Ken Karns

species@columbus.rr.com

Your ideas and suggestions are welcome.

The database is under a significant restructuring and when complete will be a monumental work with functionality that will be amazing.

Web-Site Home Page Contents

- Collecting
- Image Gallery
- Ohio Beetles Database
- Field Trip/Activities Calendar
- Ohio Beetles Bulletin
- Membership Information
- American Burying Beetle Project

Myrmecophilous Coleoptera of OHIO

Beetles exploit, to some degree, nearly every niche habitat one could imagine. This fact makes the study of beetles a fascinating and rewarding endeavor. Inquiline coleoptera, or those living with another organism, hold a particular interest with many beetle workers. The author has been working the past couple of years on gaining a rudimentary knowledge of these beetles and particularly those associated with ants.

The most obvious ants to investigate for beetles are the mound builders or those ants that build the large earthen mounds one sees along roadsides and fields. This ant, *Formica exsectoides* Forel, can be identified by this type of nest construction. Gary Coover, in his monumental work on the Formicidae of Ohio entitled The Ants of Ohio (2005), considers "this species a "sixty mile-per-hour" ant, as it is the only species that can be consistently and correctly identified at the given speed." Locating likely ant nests to work is relatively easy as they do stand out and the ants tend to utilize low vegetation areas such as field edges, roadsides and clearings (figure 4.). Working an ant nest of this type for its beetles can be accomplished in one of two ways. The first method is to place flat stones or pieces of wood on the sides of the nest mound. After a few days or a week return to the nest and quickly pick up the "traps" and place them on a sheet beside the nest. Carefully, but quickly, examine the surface of the nest mound where the rock or wood piece

had been for any beetles. Inspect the underside of the trap and the adhering dirt can be tapped or scraped off onto the sheet and inspected for beetles. Although fewer ants are antagonized by this method, I have found it less productive than the following:

This method, and the one I prefer, involves the wholesale removal of quantities of nest material for sifting and examination over the sheet. A sheet is placed a few feet away from the nest mound and a 1/4 inch mesh sifter is placed on the sheet (figure 5.) Handfuls of nest material are placed in the sifter and small quantities at a time are sifted over the sheet. Carefully inspect the siftings for beetles as some move rather sluggishly such as the Histeridae and some, such as the Staphylinidae, move quite rapidly.

Once the sifting is done the nest material is taken back to the nest and dumped on the nest mound and the ants will quickly make good any damage to the nest. It is advisable to tuck ones pant legs into socks and wear a long sleeve shirt with the sleeves tucked into a pair of cloth gloves for obvious reasons!

It is worth mentioning that the best time to work ant nests is in the spring and fall when temperatures are mild as the beetles tend to be closer to the surface of the nest mound. The beetles seem to be more active in the spring and fall as well and likely has to do with their dispersal patterns. If a summer investigation is carried out, early morning would be best before the nest begins to heat up and the beetles retreat to the inner sanctum of the nest.



(figure 1.) **Staphylinidae:** *Megastilicus formicarius* Casey
19-April-2008, Ross County, Ohio (6.0mm)
det. M.K. Thayer 2009
Sifted from nest material of *Formica exsectoides* Forel.
This beetle only found in association with this ant.
Ken Karns collection and photo.

Most of the nest mounds I have sampled have contained beetles to some varying degree. This paper is meant as an introductory sampling of the beetles associated with ants in Ohio. This ongoing project will provide material and species lists for future updates in the OBB and for inclusion in the Ohio Beetles Database.

In the sampling of *Formica exsectoides* nests in Southeastern Ohio I have come to the, albeit premature, conclusion that there are three beetles from two different families that seem to show up in most of the nests sampled in the study area; the Staphylinidae: *Megastilicus formicarius* Casey (figure 1.), the Pselaphinae: *Cedius ziegleri* LeConte (figure 2.), and the Histeridae: *Hetaerius brunneipennis* Randall (figure 3.) *M. formicarius*, to my knowledge, only occurs with this ant. It mimics the ant in size, coloration and locomotion and is at first difficult to separate and collect from the seething mass of ants on the sheet! Once you get the “search image” down it can be rather quickly located.



(figure 2.) Pselaphinae:
Cedius ziegleri LeConte
19-April-2008 Ross County, Ohio (3.2mm)
det. D.S. Chandler, 2009
Ken Karns specimen and photo



(figure 3.) Histeridae:
Hetaerius brunneipennis Randall
19-April-2008 Ross County, Ohio (2.0mm)
det. K.D. Karns
Ken Karns specimen and photo

C. ziegleri is one of several Pselaphids that have been encountered rather routinely in the nest mounds. It is however, the largest and most conspicuous. It is a handsome insect and at just over 3.0mm must be one of our largest Pselaphids. And finally the Histeridae: *H. brunneipennis*, which is characteristic of the genus, is a commonly encountered beetle in the nests of *F. exsectoides*. It is however, not exclusive to this ant as I have collected it under flat rocks along a creek in association with a yet unidentified black ant.

There is much to learn regarding the biology of the ant and “quest” associations. A superb text on these relationships and the relationship of ants with other insect orders is found in Guests of British Ants by Donisthorpe, 1927. Although a British publication, there is a wealth of applicable information and the observations Donisthorpe was able to carry out were amazing. This is a must read for anyone interested in myrmecophiles. I picked up my copy through an old book dealer specializing in hard to find biology publications.

Future issues of the OBB will delve into beetles associated with other ant species and expand on the list of those from *Formica exsectoides*. In addition, the author has been collecting from ground hog burrows, squirrel nests, moles nests, and rumor has it a beaver lodge is need of exploration! Did I mention the cool beetles Bob Androw and I sifted from Prairie Dog Burrows in Nebraska? Another story.....



(figure 4.) George Keeney inspecting a *Formica exsectoides* nest mound constructed at the base of a group of saplings. Can't say I have seen this before. Usually the nests are isolated mounds but they do occur frequently in groups of several nests.



(figure 5.) Sifting nest debris. Note the home made sifter with 1/4 mesh hardware cloth, canvas sheet (old BioQuip beating sheet), and aspirator in left pocket.

Note the stylish look of the socks over the pant legs! Good idea when working ant nests.